

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Previously Presented) A manufacturing method of a hydroxyapatite complex including a hydroxyapatite sintered compact and a polymer-based material, comprising the step of:

a) reacting the hydroxyapatite sintered compact with an alkoxysilyl group of the polymer-based material, so as to chemically bond the hydroxyapatite sintered compact and the polymer-based material.

2. (Previously Presented) A manufacturing method of a hydroxyapatite complex including a hydroxyapatite sintered compact and a polymer-based material, comprising the steps of:

a) introducing an alkoxysilyl group into the polymer-based material; and

b) reacting the hydroxyapatite sintered compact with the alkoxysilyl group of the polymer-based material so as to chemically bond the hydroxyapatite sintered compact with the polymer-based material.

3. (Previously Presented) The manufacturing method of a hydroxyapatite complex as set forth in claim 2, wherein:

the step (a) is performed using a compound, that contains a reactive functional group and an alkoxysilyl group, so as to react the reactive functional group with the polymer-based material.

4. (Original) The manufacturing method of a hydroxyapatite complex as set forth in claim 3, wherein:

the compound is a silane coupling agent.

5. (Previously Presented) The manufacturing method of a hydroxyapatite complex as set forth in claim 2, further comprising the step of:

c) introducing an active group into the polymer-based material before the step (a),

wherein:

the step (a) is performed using a compound, that contains a reactive functional group and at least one functional group and an alkoxysilyl group, so as to react the reactive functional group with the active group of the polymer-based material.

6. (Original) The manufacturing method of a hydroxyapatite complex as set forth in claim 5, wherein:

the compound is a silane coupling agent.

7. (Original) The manufacturing method of a hydroxyapatite complex as set forth in claim 1, wherein:

the polymer-based material is a medical polymeric material.

8. (Original) The manufacturing method of a hydroxyapatite complex as set forth in claim 7, wherein:

the medical polymeric material is a silk fibroin.

9. (Previously Presented) A hydroxyapatite complex in which a hydroxyapatite sintered compact and a polymer-based material containing an alkoxysilyl group are chemically bonded, wherein:

the hydroxyapatite sintered compact is chemically bonded directly to the alkoxysilyl group of the polymer-based material.

10. (Cancelled)

11. (Previously Presented) A medical material made of a hydroxyapatite complex in which a hydroxyapatite sintered compact and a polymer-based material containing an alkoxysilyl group are chemically bonded, wherein:

the hydroxyapatite sintered compact is chemically bonded directly to the alkoxysilyl group of the polymer-based material.

12. (Cancelled)

13. (Currently Amended) A percutaneous trans-catheter made of the medical material as set forth in claim 20 ~~12~~.

14. (Previously Presented) The percutaneous trans-catheter as set forth in claim 13, wherein:

the hydroxyapatite sintered compact is formed as a layer with a thickness ranging from 0.0001% to 100% with respect to an entire thickness of the polymer-based material.

15. (Currently Amended) A percutaneous terminal made of the medical material as set forth in claim 20 ~~12~~.

16. (Currently Amended) An artificial blood vessel made of the medical material as set forth in claim 20 ~~12~~.

17. (Currently Amended) An artificial organ made of the medical material as set forth in claim 20 ~~12~~.

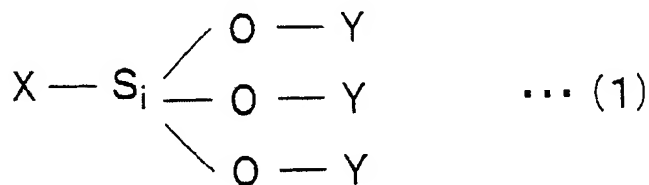
18. (Previously Presented) A manufacturing method of a hydroxyapatite complex comprising a hydroxyapatite sintered compact and a polymer-based material, comprising the step of:

reacting the hydroxyapatite sintered compact with an isocyanate group of silk fibroin, so as to form a chemical bond.

19. (New) A hydroxyapatite complex in which a hydroxyl group of a hydroxyapatite sintered compact and an alkoxysilyl group of a polymer-based material containing the alkoxysilyl group, which is expressed as $-\text{Si} \equiv (\text{OR})_3$, are chemically bonded,

wherein:

the hydroxyapatite complex comprises the following structure:

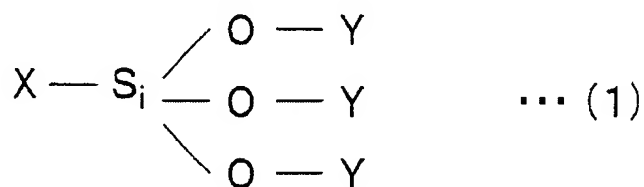


where X expresses the polymer-based material, and Y expresses the hydroxyapatite sintered compact.

20. (New) A medical material made of a hydroxyapatite complex in which a hydroxyl group of a hydroxyapatite sintered compact and an alkoxysilyl group of a polymer-based material containing the alkoxysilyl group, which is expressed as $-\text{Si} \equiv (\text{OR})_3$, are chemically bonded,

wherein:

the hydroxyapatite complex comprises the following structure:



where X expresses the polymer-based material, and Y expresses the hydroxyapatite sintered compact.